



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/692,729	10/27/2003	Akihiko Tateiwa	300.1136	9713
21171	7590	12/27/2005	EXAMINER	
STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			STAHL, MICHAEL J	
			ART UNIT	PAPER NUMBER
			2874	

DATE MAILED: 12/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/692,729

Applicant(s)

TATEIWA, AKIHIKO

Examiner

Mike Stahl

Art Unit

2874



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1 is/are allowed.
- 6) ☒ Claim(s) 2-3 is/are rejected.
- 7) ☒ Claim(s) 2 and 4 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

***Claim Objections***

Claim 2 is objected to because certain recited elements should be made plural to be consistent with the limitations added by the September 26, 2005 amendment. In particular, “the terminal face of the lead of the optical fiber” after “pushing simultaneously” should be changed to “the terminal faces of the leads of the optical fibers”.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Luther et al. (US 6957920).

Claim 2: Luther discloses a method of forming an inclined surface at a terminal face of a lead of an optical fiber 18, the inclined surface being inclined by a certain angle with respect to a plane perpendicular to an optical axis of the lead, the method including: holding a plurality of optical fibers 18 simultaneously (via ferrule 12), and pushing simultaneously the terminal faces of the leads of the optical fibers toward a grinding surface of a grinding apparatus while moving in a certain direction so that a terminal portion of each lead is resiliently bent to form the inclined surface at the terminal face of the lead. See figs. 3A-3H. The fibers may be processed to have inclined surfaces as shown in fig. 6B. The pushing toward a grinding apparatus is implied at col. 9 lns. 30-44. Because the fibers extend beyond the mating end of ferrule 12 by at least several

microns before the grinding step, it is inherent that they are resiliently bent to some extent during the grinding process. Luther does not specifically disclose that each fiber includes the recited cover, from which the lead portion extends. Optical fibers having covers, typically in the form of at least one coating layer, are well known in the art. The coating layer provides mechanical protection for the fiber and can reduce losses incurred by bends in the fiber. It would have been obvious to a skilled person to have used individually coated fibers in the Luther apparatus since this would advantageously provide protection for the lengths of fibers which extend out the back end of connector 10.

Claim 3: Luther does not specifically refer to a tape-like optical fiber cable (frequently called a ribbon cable in U.S. terminology). However, the disclosed multi-fiber ferrules are well suited for optically connecting the respective fibers of a pair of fiber ribbon cables since the ferrules provide uniformly spaced bores which can be associated with the uniformly spaced fibers of each ribbon cable. Accordingly it would have been obvious to a skilled person to have used the Luther connector design with optical fiber ribbon cables in order to achieve the optical connection benefits described in that reference. When the proposed combination is carried out, the respective covered fibers of the cable would be separated from the ribbon matrix and their lead portions inserted into the ferrule 12, and subsequently the ferrule including the protruding fibers would be processed in the manner described in Luther. This processing would have met the steps of claim 3.

***Response to Arguments***

The remarks regarding the previous rejection of claims 1-4 based on the admitted prior art of fig. 6 are persuasive. Claim 1 was amended to distinguish over fig. 6 in the manner proposed in the last Office action. As to claims 2-4, the fibers shown in fig. 6 are apparently held rigidly by a holding member so that they cannot bend as required by these claims. It is noted that JP 2001-324647, which is related to fig. 6, teaches that the end face of the substrate which holds the fibers is polished simultaneously with the fibers. Thus the rejection based on admitted prior art has been withdrawn. The remarks regarding the previously applied Chiba reference are persuasive to the extent that claim 2 was amended to recite that plural fibers are held simultaneously. The arrangement disclosed in Chiba appears to be capable of processing only one fiber at a time. Thus the rejection of claim 2 under Chiba has been withdrawn.

***Allowable Subject Matter***

Claim 1 is allowed. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim.

Claim 1 was amended to distinguish over the admitted prior art of fig. 6. The examiner is not aware of any prior art references which teach or suggest a fiber cable having all the limitations of claim 1 as amended.

Claim 4 requires a graded index fiber to be fused to the terminal face of each lead. The Luther et al. reference applied to base claim 3 does not disclose or suggest this feature. It is not clear that a skilled person would see any need to add graded index fiber portions to the leads

Art Unit: 2874

because the protruding fibers of the Luther connector are intended to directly abut corresponding fibers of a similar connector; thus collimation of the beam exiting each lead should not be an issue in that arrangement. The other prior art of record also fails to teach or suggest all the limitations of claim 4.


### *Conclusion*

Inquiries about this letter should be directed to Mike Stahl at 571-272-2360. Inquiries of a general or clerical nature (e.g., a request for a missing form or paper, etc.) should be directed to the technical support staff supervisor at 571-272-1626. Official correspondence which is eligible for submission by facsimile and which pertains to this application may be faxed to 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Questions about the Private PAIR system should be directed to the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MSS

Mike Stahl  
Patent Examiner  
Art Unit 2874

December 16, 2005



Sung Pak  
Primary Examiner  
AU 2874